An FAO OIE International Initiative for a Global Progressive Control of FMD

presented by
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in consultation with OIE

EU FMD-Erice, Italy
14-17 October 2008
| Animal Health Standards and Guidelines setting and Adoption | Standards and Guidelines Setting |
| Good Farming Practices Guidelines and Strategies | Good Farming Practices & Strategies |
| Animal Disease Information and Intelligence | Official Disease Information |
| | Disease Tracking |
| | Disease intelligence |
| Expertise on Animal Health worldwide | Expertise |
| Expertise for Development Programs on Animal Health | Expertise for Development Programs on Animal Health |
| Animal Health Publications | Technical and Scientific Publications |
| Capacity Building Programs on Animal Health on standards and guidelines implementation | Global |
| | Regional |
| Development programs on Animal Health | National |
| | Global |
| | Regional |
| | National |
Under FAO - OIE GF TADS umbrella most of the time

Global Framework for the Progressive Control of Transboundary Animal Diseases
Launching of the GF TADs Regional Steering Committees

- Asia, Tokyo, 7-9 March 2005
- Americas, Buenos-Aires, 14-15 April 2005
- Europe, Paris, 13-14 October 2005
- Middle East, Beirut, 6-7 April 2006
- Africa, Bamako, 28-29 April 2006
- Middle East, Damascus, 6-7 November 2006
- Africa, Djibouti, 27 March 2007
- Middle East, Amman, September 2007
Early Warning
Early Reaction
Coordination
Enabling Research
Emergency Center for Transboundary Animal Diseases (ECTAD)

Special Fund For Emergency and Rehabilitation Activities (SFERA)

Technical Cooperation Programmes (TCP) Trust Funds

Chain of Command CVO
Available Tools at the Global Level

Crisis Management Center

Global Early Warning System
Crisis Management Centre - Animal Health
Global Early Warning System

GLEWS

A major component of GF TADs Initiative
Sources of information

- OIE Information
- Promed, Gphin (non official sources)
- Projects (surveillance activities)
- Field FAO officers
- FAO networks such as:
OIE Early Warning System
Development of a GLEWS electronic platform
Disease alert and early warning messages

- digested analysis/disease intelligence
- Analysis-modeling-prediction
- forecasting messages

**Factual**

**Digested**

**Forecasting**


1. Introduction

Following the introduction of H5N1 HAIV into Europe, the disease has been reported (as of August 2006) in poultry or wild birds in 25 European countries. From October 2005 onwards, outbreaks of H5N1 HAIV in domestic poultry have been reported in France, Germany, Hungary, Romania, Russian Federation, Serbia, Turkey and Ukraine, with over 230 affected outbreaks in Romania alone. With the exception of Holland, all countries also detected H5N1 in wild birds. (H5N1 cases reported in H5N1 wild birds only (Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Greece, Italy, Poland, Slovakia, Spain, Slovenia, Switzerland, United Kingdom), H5N1 was also isolated from a human patient (Bulgaria) and captive wild birds (Game and zoo animals). Since the disease was observed in China, Hong Kong, Romania, the Russian Federation, Turkey and Ukraine. The positive cases of H5N1 were reported from Armenia, Macedonia or Moldova, although the borders with Russia remain closed. In addition, 39 human cases were observed in the European region (2006) with nine deaths. A detailed report on the human cases in January 2006, of which two were fatal, and Turkey reported another human case in January 2006, of which three were fatal.

Based on the migratory routes of A (H5N1) HAI virus (mainly via the western Mediterranean Sea), the period for migration usually precedes the first field case. A timing and location of migration inhibit the spread of the virus in Europe during spring and autumn. However, the virus may be transported in migratory birds, and outbreaks are characterized by the onset of abortions and high mortality rates. Transmission from birds to humans can occur through close contact with infected material (sputum, respiratory secretions of infected individuals), but the virus (H5N1 strain) is transmitted in poultry by various arthropods including a mosquito genus (Aedes, Culex, Mansonia, Uranotaenia, Coquillettidia and Culex) with more than 30 species of mosquitoes recorded as infected in some of them being potential vectors. This conceals the vast potential of these species for the infection by being infected specifically, and some of these specifically affected species (Culex spp.) transmit the virus for their vectors. These infected mosquitoes can survive through the winter in various parts of the world, and if the virus is able to infect the vector, it may remain dormant until the next season. This vertical infection explains how the disease can persist between outbreaks.

Rift Valley Fever (RVF) is an arthropod-borne viral disease of reptiles, birds and mammals, ranging from warm and tropical countries such as the Sudan, African regions such as the Gambia, Caribbean and beyond. In birds, RVF can spread quickly to other species, such as ducks. In humans, RVF can cause fever, chills, vomiting, and severe headache. Symptoms can be severe and include respiratory failure, kidney failure, and sometimes death. The disease spreads through blood and other bodily fluids, such as saliva, sweat, and urine. RVF can be transmitted to humans through contact with infected animals or their products. RVF can also spread from one continent to another, especially in Africa, where the disease is most common. RVF can have a significant impact on agriculture and livestock, as well as on human health. RVF is a zoonotic disease, meaning that it can be transmitted from animals to humans, and from humans to animals. RVF is a serious threat to human health, livestock, and agriculture, and is a priority for international efforts to control and prevent the spread of the disease.
Holistic Approaches to Diseases

- Farming systems
- Animal populations and movements
- Land use
- Socio economic context
- Institutional context and policies
- Climate
- Natural and man made disasters
Socio Economical Issues

- Cost and benefit analysis of vaccination campaigns
- Compensation: mechanisms, cost...
  On going activities with WB, FAO, IFPRI, OIE
- Long term restructuring
- Socio economic impacts on small holders, Mitigation options...
- Impacts on biodiversity
FAO Socio-economics group
Socio-economics Group works on:

- Costs and cost-effectiveness of prevention measures (surveillance, border controls)
- Costs and cost-effectiveness of control measures (culling and compensation, vaccination, quarantine, biosecurity measures)
- Economic analysis inputs to disease epidemiology (value chain analysis to support risk assessments)
- Disease impacts - market and livelihoods in order to plan for immediate (emergency) policy change and rehabilitation measures
Coordination and liaison

- SEC is based in Rome and in the regions
- It coordinates and liaises on technical issues with:
  - Production
  - EMPRES – GLEWS, Wildlife
  - Communication
- It is part of multidisciplinary teams at country and regional levels
Strategy assessment

• The ECTAD SEC group aims to contribute to the development of disease control and prevention strategies that are:

  • technical feasible
  • economically sustainable
  • social acceptable
  • well supported politically
Protecting livestock to protect people
Through a people centered approach
Regional Animal Health Centers

• Hosted by OIE Regional or Sub Regional Offices or FAO Offices
• Tripartite OIE FAO IBAR in Africa
REGIONAL ANIMAL HEALTH CENTERS

- Ankara
- Tunis
- Beirut
- Bamako
- Nairobi
- Gaborone

Regional Animal Health Center
Regional – Networks

- Epidemiosurveillance Networks
- Laboratory Networks
- Socio-economics networks
Need for networking approaches

- Break the isolation of the teams
- Economies of scale for training...
- Share of experiences
- Share of informations

“Club” of experts
Emergence of regional leaders
Quality and transparency of the information
Regional leaders identified

Methods and tools harmonized

Role of OIE FAO International Reference Laboratories and Epidemiology Collaborating Centers
Welcome to the official site of the FAO-ECTAD regional unit at the RAHC in Bamako! For more than two years we have been fighting together to prevent, detect and control the Highly Pathogenic Avian Influenza and to improve the conditions of poultry production. Within the last few months our team and structure have been reinforced and are now almost at full capacity. Many dossiers concerning other priority animal diseases will be treated. In view of the increasing volume of activity, new (...) suite
EUFMD Commission

- 35 member states in Europe (26 EU + 9 non-EU members)
- governed by member states
- EC (SANCO) agreement with FAO for support of actions (8 m€, to 2009)
- priorities: reducing risk of FMD incursions
  increasing recognition that EU is at risk from distant locations

Partnership OIE
Focus on delivery in four key categories of action in the period 2005-8:

- **Support to mainly South-Eastern Europe:**
  - *FMD control in “traditional risk areas”* - threatening south-eastern Europe and Turkey, including actions in Iran, Syria, Trans-Caucasus.

- **Support to risk management – all Europe:**
  - Global FMD observation – supporting surveillance on virus circulation and risk.
  - Technical Committee/network: coordination of technical studies to address constraints to policy implementation.
  - Capacity building across Europe – raising and retaining expertise and competence in the scientific basis of FMD control and in best practises in epidemic management.
FMD control in “traditional risk areas”

- Turkey: with DG-SANCO, emergency actions, epidemiology training and outbreak investigation (to 4/2008)
- Trans-Caucasus: maintenance of the FMD vaccination buffer zone (to mid-2009)
- Iran and Syria (rationale: to support FMD control in Turkey): FMD management, epidemiology and sero-monitoring support (to mid-2009)

Critical control points - West Eurasia: multi-partite cooperation is essential
Towards a Mediterranean Animal Health Network: An Euro-Maghreb Network

RAHC-North Africa has increasingly involved the CVOs of southern European countries in the coordination activities. This approach has culminated in the Avila (Spain) regional animal health coordination meeting last April, organized by RAHC-NA and hosted by Spain with the participation of representatives from the veterinary services of 5 North African and 4 Southern European countries.
FMD Example

Build on existing informal platform operating under Gf-TADS

“Mediterranean: FMD surveillance and control network”

EuFMD
(European countries including Turkey and Israel)
ROME

Maghreb
FAO/OIE Regional Animal Health Centre
TUNIS

all countries in region

Middle-east
FAO/OIE Regional Animal Health Centre
BEIRUT
Context of Emergence and Spread of Diseases

- **Human behaviour**
  - population growth
  - poverty on the rise
  - rapid economic development and urbanization
  - increase in food demand...
- **Farming system**
  - intensification
  - poverty and biosecurity
- **Wild life factor**
  - forest encroachment
  - bush meat
  - exotic animal farming
  - trade of exotic animals

- **Climate change**
  - Vector ecology (flies, ticks, mosquitoes)
  - Invading pathogen adaptation with new vectors

- **Globalized travel and Trade**
  - Migratory patterns
  - Increases in international air travel (5%/yr)
  - They include the shipment of livestock
  - Entrenchment in poor farming communities
‘One World One Health’

• Global strategy for managing risks of infectious diseases at the animal-human interface

• Jointly developed by FAO, WHO, OIE, UNICEF in collaboration with World Bank and UNSIC

• To build on AHI crisis lessons

• To address IEDs at the human/animal interface which are transboundary in nature and cause wide ranging impacts

• To be presented in Sharm El Sheikh International Conference, Egypt, 24-26 October 2008
An FAO OIE International Initiative for a Global Progressive Control of FMD
Foot and Mouth Disease

Incursions of FMDV to western Europe and neighborhood from FIVE virus pools (ecosystems) in the past 12 years.

Type O, Type A, Type Asia-1, Type SAT2
Epidemiological situation overview
7 Global FMD “regional” pools
made of distinct virus strains
• FMD: First rank disease across GF-TAD regions

• Direct and indirect impacts on
  – global food prices (through lost feed conversion efficiency, notably far-east)
  – livelihoods (direct losses, market access)
  – global livestock sector including OECD economies (recurrent prevention costs, trade impacts of outbreaks)

• A “One World” problem
  (Charm El-Cheik Inter Ministerial Conference, Oct 2008)
  – prevention effort unequally distributed: least effort where greatest disease burden
  – concerted action required across regions
FMD control can only be achieved

......by actions at the field level to break transmission cycles.

......when vets and animal owners in the front-line are armed with sufficient information and suitable tools (vaccines)

......when there is sufficient private and public support

International organizations have a role in supporting the conditions that promote sustained national actions
Progressive risk reduction approach

No top down prescribed approach: but each MS encouraged to develop national risk reduction strategies that are supportive to the regional effort.

- Risk not controlled: Continuous FMDV circulation
- Critical risk points addressed: Discontinuous circulation
- Under control: Outbreaks < once/ per year
- Approaching freedom: Officially Free with vaccination
  - No circulation/Containment zones only

Incidence ↓
Major gaps in resourcing

- Enormous differences in public/private funding for FMD control between countries and regions.

- 3 billion doses of FMD vaccine are used annually, but the gap between required immunity (>80%) and current coverage rates (mostly <5%) remains enormous.

- 3 of the virus pools have almost no tailored vaccine for the predominant strains (Africa: SAT 1 and 2).

- Lack of incentives in most endemic countries to improve; control programs fail to progress as they are not supported by the producers (farmers organizations etc).
GREP – the campaign concept
Working together to make the world a safer place for food production from livestock and for trade
Four elements of the Strategy

1. to create the international conditions favoring long term public and private investment in member states.
2. to create conditions that favor regional, national and local actions against FMD, including access to up to date risk management information and effective vaccines.
3. to maintain or create conditions that encourage countries to embark on progressive FMD risk reduction approach.
4. to maintain or increase investment in FMD R & D science until the tools for FMD control are affordable and effective for wide application in each of the international virus pools
Keeping strategy simple: The 3ABC of becoming FMD free

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<th>EACH MEMBER STATE: National strategy plans tailored to situation</th>
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<td>1</td>
<td>Achieve immunity in key populations at local scale</td>
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<td>2</td>
<td>EACH REGION (virus pool): Regional Roadmaps</td>
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<td>3</td>
<td>Build partnerships among stakeholders at national level that will drive long term programs and commitments at all required levels</td>
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<td>Commit to partnership in regional roadmaps (programs) that will safeguard progress, achieve Regional buy-in, anticipate and react to potential setbacks</td>
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GLOBAL: A Framework to engage global support and partnerships,
Principles of an FAO OIE Global Framework for Action against FMD

- Within the GF-TADs framework (strengths and coverage of FAO and OIE)
- Builds on existing partnerships and regional actions; and on political and scientific alliances
- National responsibility for FMD control
- Sustainable and long-term approach
- Strong socio economic analyses
- Proposed an approach with “Regional Roadmaps” for action in all of the major virus pools (reservoirs)
- No global solution → tailored (vaccination) approach (each virus pool is distinct)
- Promotion of surveillance and applied research
The Road to an international strategy

1st: the General Structure in place: GF TADs global and regional
2nd: technical meeting to identify main elements of a global strategy (EuFMD-Erice 2008)
3rd: technical meetings to develop regional road maps (Eg. SEA FMD, Central Asia, Africa...)
4th: Global OIE/FAO high level FMD conference, Paraguay June 2009. Expected commitment to principles and support pledged for the proposed global plan
5th: Implement technical support at global/regional level
6th: follow-on conferences:
   Beijing 2010 (focus on endemic regions)
   EuFMD Open Session 2010 (Global technical)
The strategy should address the main issues explored at EuFMD-Erice 2008

The recommendations from EuFMD-Erice 2008 will be considered in preparing regional and global strategies

1. How to coordinate national efforts under regional roadmaps
2. Support increased effort and achieve stakeholder buy-in
3. Optimize vaccination to break transmission
4. Provide quality diagnostic and information required to plan effective measures
5. Measuring and communicate risk, and global progress
6. Reduce capacity gaps in veterinary services
7. Sustain investment at all levels
Main operational elements

Regional Roadmaps

- multi-country commitment to principles
- each region provided with minimum technical support within 2 years
  1. laboratory support linked to OIE/FAO FMD ref lab network and global QA
  2. funds to undertake critical risk pathway analysis at regional scale
  3. suitable vaccines identified or vaccine producers address gaps
Main operational elements

Global Platform and FMD Secretariat

- A platform to engage global support and partnerships, evolve and adapt to challenges

- A Secretariat to support regional efforts, audit progress and communicate to all parties (yearly FAO/OIE State of FMD progress report)
  GREP model
Preparation of a global strategy for FMD

Agenda

Regional meetings
- West Eurasia (Nov 1-3 2008, Shiraz)
- South Asia (Febr 2009)
- South-East Asia (ongoing)
- Western /Central Africa (tbd)
- Eastern Africa (Nov 2008)
- Southern Africa (tbd)
- South America (ongoing)

Technical meetings
- Paraguay (April 2009)
- China/Beijing (2009 - 2010?)

Objectives
- science based debate on tools and options to improve FMD control
- exchange and debate : diverse ideas, evolving new approaches
- agree ideals and principles for effective action against endemic FMD
- ensure scientific basis of international strategy against FMD is exposed to scrutiny

EUFMD-Erice 2008
where the world’s technical specialists on FMD get together

Erice, Sicily
14-17 October 2008

The Global Control of FMD – Tools, Ideas and Ideals
The elements discussed at EuFMD-Erice 2008
Coordinating national efforts to achieve regional progress (Session 1)

The Watershed Concept
Global FMD pool = is made of mostly separate “regional” pools (~7)
Each pool has antigenically distinct virus strains – requiring adapted vaccination programs
Coordinating national efforts to achieve regional progress (Session 1)

Opportunities:
- seven regional roadmaps for seven virus pools
- regional co-ordination, regional solutions
OIE/FAO FMD Reference Centres (RCs) and the pools: each pool should have at least one RC

Source: Annual OIE/FAO FMD Reference Laboratory Network Report, 2007
Opportunities:

- targeted vaccination – to risk populations and ages (2A)
- produce regular guidelines (antigens, potency) for each regional FMDV pool (2B)
- build on current R&D to develop novel vaccines (2C)
- implement a global system of independent analysis of vaccine performance (accredited labs to undertake serology) (2D)
Opportunities:

- international standards and policy objectives that encourage investment at farm/containment level

- FAO/OIE/partners to promote critical risk control analyses for endemic countries

- socio economic analysis to determine sustainable and cost effective national FMD risk reduction strategies that address critical risk control points in the market chain risk
Measuring global progress in risk reduction and early warning (Session 4)

Opportunities:

- Global Secretariat and support to OIE/FAO ref lab Network
- apply new surveillance options to increase information and analytical/predictive power (vaccine matching)
- implement a set of projects for multi-country incidence monitoring
- apply new inactivated procedures for shipping samples to Ref Labs
- monitor incidence (NSP%) of infection as measure of vaccination success
Information for action: how to ensure quality lab services are available where needed (Session 5)

Opportunities:

- supply all endemic countries with a minimum diagnostic capacity
  - penside/ rapid test systems
- support/implement a global QA system for Reference Labs
- fill gaps in diagnostic test kits needed for use in endemic regions
Veterinary service capacity to prevent and control (Session 6)

Opportunities:

– FMD can only be fought at the frontline
  • with stakeholder support
  • OIE PVS assessments
  • international need to assess and monitor capacity build-up

– utilise PRA to rapidly assess FMD epidemiology, reasons for control failure, intervention options

– invest in epidemiosurveillance and
Coherent and feasible global strategy to achieve change (Session 8)

• Keynote:
  GF TADs context and Elements of a global FAO/OIE strategy for FMD control
• Panel discussion
  – OIE, EC, EuFMD
  – WRL Pirbright (OIE/FAO Ref Lab network)
  – Global FMD Research Alliance (GFRA)
• Opportunity
  – to shape major elements to be considered in the international strategy to be discussed at OIE/FAO Paraguay Conference in 2009
Thank you for your attention